

REMARKS**OVERVIEW**

Claims 1-6 are pending in this application. The present response is believed to place the application in form for allowance. Reconsideration is respectfully requested.

AMENDMENT

Claim 1 is amended. The basis for the amendment is found at least in the Specification at page 4, line 30, Figure 2 and page 5, line 6.

Claim 15 is new. The basis for this claim is found at least in the Specification at page 5, line 9 and Figure 2.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Young (U.S. 4,002,542). Applicant respectfully traverses this rejection.

Young teaches a method of forming a capacitor. A capacitor has two electrodes, each of which has only one "termination" (see Specification, p. 4, line 31 and claim 1) that electrically connects each electrode to the circuit. In contrast, the present application teaches a method of manufacturing a film resistor. A resistor is not an electrode, and each resistor has two terminations that electrically connect the resistor to the circuit. (See Specification, Figure 2). Therefore, Young does not teach the limitation of claim 1 that requires that the metal film have two terminations.

Claims 1-6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Takamatsu et al. (Japan 59-262-77). Applicant respectfully traverses this rejection.

Takamatsu does teach the deposition of a metal layer (gold). However, Takamatsu teaches that a silicon dioxide layer directly overlays and attaches to this metal layer. Takamatsu Drawing 4(A). Claims 1-5 of the present application specify that a tantalum pentoxide, rather than silicon dioxide, layer directly overlays and attaches to the metal layer.

Claim 6 has been cancelled without prejudice. Therefore, the objection is moot.

The Applicant has added new claim 15. Claim 15 is distinguishable from the prior art cited by the Examiner for the reasons below:

Claim 15 of the present application specifies that a passivation layer directly overlays and attaches to a metal layer. A passivation layer protects an underlying layer from corrosion. Takamatsu teaches a silicon dioxide layer that directly overlays and attaches to a gold layer. "Gold is a very inactive metal. It neither combines directly with oxygen nor corrodes in the atmosphere." See W.H. Nebergall, et al., General Chemistry, 893 (6th ed. 1980). The silicon dioxide layer in the Takamatsu disclosure cannot be considered a passivation layer because the underlying layer, gold, is corrosion resistant.

In addition, claim 15 of the present application specifies that a metal layer is deposited on a substrate. "Substrate" is defined as "alumina or other substrate that may be used in thin film processes." Specification, p. 4, line 16. The metal layer "serves as the resistive element for the thin film resistor." *Id.* at line 18. The resistive element is distinct from the substrate.

Takamatsu teaches a metal layer (gold and nichrome) that directly overlays and attaches to a tantalum nitride layer that, in turn, directly overlays and attaches to a substrate. Takamatsu Drawing 4A. The difference is that the metal layer in Takamatsu does not directly overlay and attach to a substrate. Tantalum nitride is not a "substrate." Tantalum nitride is one of the two most popular materials used to build thin film resistors. See Harcourt: AP Dictionary of Science

and Technology, <http://www.harcourt.com/dictionary/def/1/0/1/7/10175300.html>; IRC's TanFilm vs. Nichrome Comparison Page, <http://www.irctt.com/pages/tanfilmvideo.cfm>. The tantalum nitride layer cannot be considered the substrate because it is the resistive element layer rather than the layer beneath the resistive element. The substrate in Takamatsu is the ceramic layer. In addition, Tantalum nitride cannot be considered the metal layer in Takamatsu. Metals show metallic luster. See W.H. Nebergall, et al., General Chemistry, 175 (6th ed. 1980). Tantalum nitride, in contrast, is composed of "brown to black hexagonal crystals." See Harcourt: AP Dictionary of Science and Technology, <http://www.harcourt.com/dictionary/def/1/0/1/7/10175200.html>.

The Examiner should find claim 15 allowable.

SUMMARY

For the foregoing reasons, Applicant respectfully submits that the claims are allowable.

Favorable action is respectfully requested.

No fees or extensions of time are believed to be due in connection with this application; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the change made to the claims by the current amendment. The attached page is captioned **"Version with Markings to Show Changes Made."**

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



JOHN D. GOODHUE, Reg. No. 47,603
McKEE, VOORHEES & SEASE, P.L.C.
801 Grand Avenue, Suite 3200
Des Moines, Iowa 50309-2721
Phone No. (515) 288-3667
Fax No. (515) 288-1338
CUSTOMER NO: 22885

Attorneys of Record

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**AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE**

In the Claims

1. (Amended)

A method of manufacturing a thin film resistor with a moisture barrier comprising:
depositing a metal film layer on a substrate;
attaching a termination on each end of the metal film; and
depositing a layer of tantalum pentoxide film directly overlaying and attaching to the metal film
layer.